

CLAIMS

What is claimed is:

1. A composite composition comprising
 - (a) polymeric nanoparticles ("PNPs") comprising, as copolymerized units, from 1 % to 50 %, by weight, based on the weight of said nanoparticles, of at least one multiethylenically unsaturated first monomer; from 2 % to 75%, by weight based on the weight of said nanoparticles, of at least one ethylenically unsaturated second monomer, said second monomer bearing at least one group selected from the set consisting of hydroxy; silyl; polyalkylene oxide; quaternary ammonium; quaternary phosphonium; and amines, amine N-oxides, carboxylic acids, sulfur acids and phosphorous acids, and salts thereof; and from 0 % to 97%, by weight based on the weight of said nanoparticles, of at least one monoethylenically unsaturated third monomer, said nanoparticles having a mean diameter from 1 nanometer to 50 nanometers; and
 - (b) clay nanoparticles ("CNPs").
2. The composition of claim 1 wherein the dry weight ratio of PNP/CNP is from 1/20 to 10/1.
3. A method of forming a composite composition comprising:
 - (a) providing polymeric nanoparticles comprising, as copolymerized units, from 1 % to 50 %, by weight, based on the weight of said nanoparticles, of at least one multiethylenically unsaturated first monomer; from 2 % to 75%, by weight based on the weight of said nanoparticles, of at least one ethylenically unsaturated second monomer, said second monomer bearing at least one group selected from the set consisting of hydroxy; silyl; polyalkylene oxide; quaternary ammonium; quaternary phosphonium; and amines, amine N-oxides, carboxylic acids, sulfur acids and phosphorous acids, and salts thereof; and from 0 % to 97%, by weight based on the weight of said nanoparticles, of at least one monoethylenically unsaturated third monomer, said nanoparticles having a mean diameter from 1 nanometer to 50 nanometers; and
 - (b) admixing clay nanoparticles.
4. The method of claim 3 wherein the dry weight ratio of PNP/CNP is from 1/20 to 10/1.
5. A modified composition comprising a continuous polymeric phase, said phase comprising therein the composite composition of claim 1.

6. The modified composition of claim 5 wherein said composite composition is from 1 to 30% of said modified composition, by weight, based on the weight of said modified composition.
7. A method of forming the modified composition of claim 5 comprising:
 - (a) providing a polymeric material; and
 - (b) admixing the composite composition of claim 1.
8. The method of claim 7 wherein said composite composition is from 1 to 30% of said modified composition, by weight, based on the weight of said modified composition.